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臺灣大學應用力學研究所
演 講 公 告

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主 講 人：鄭郅言研究員兼生醫應用專題中心執行長
中央研究院應用科學研究中心

講　　題：應用於生物感測與細胞培養的微流體裝置之發展

主 持 人： 陳國慶所長

時　　間： 111年10月31日（星期一）下午2時20分開始

地　　點： 臺灣大學應用力學研究所國際會議廳

☆☆ 歡迎聽講，敬請張貼 ☆☆

應用於生物感測與細胞培養的微流體裝置之發展

Development of microfluidic devices and their applications – biosensing and cell culturing with controlled microenvironment

鄭郅言研究員兼生醫應用專題中心執行長

中央研究院應用科學研究中心

Abstract

I will report our contribution on the development and applications of microfluidic devices. Some examples will be used for demonstration. These may include, depending on the available time, chemical synthesis of DNA microarray, PCR, cell culturing, chemical gradient and electrotaxis (i.e. migration of adherent cell in week electric-field), whole-cell biosensing, nano-structure SPR biosensing.

Biography

Dr. **Ji-Yen Cheng** received his B.Sc., M.Sc., and Ph.D. degree in Chemistry Department of National Taiwan University. After graduation in 1998, he then started his post-doc research on the DNA microarray in Institute of Biomedical Sciences in Academia Sinica Taiwan. In 2001 he became an assistant researcher in Research Center for Applied Sciences in Academia Sinica and was promoted to research fellow in 2013. His research interest is in the biological applications of microfluidics. Some specific topics include the following:

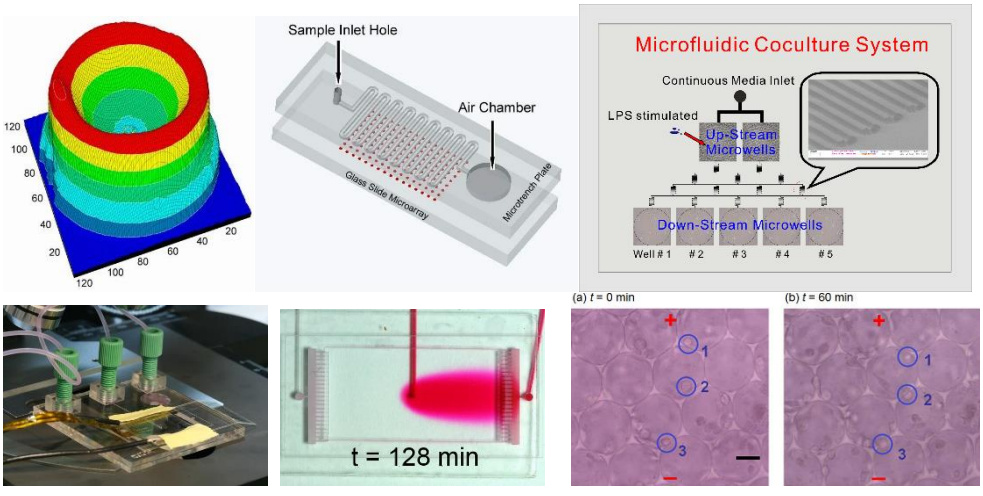
Cell-based micro analysis, especially cell response in weak DC EF, cell-cell interaction co-culture chip, cellular chemotaxis, electrotaxis and metastasis, affinity binding and separation.

Rapid prototyping of microfluidic biochip using laser micromachining.

Microarray technologies such as flexible in-situ array synthesis, rapid hybridization, mRNA labeling chip, and portable DNA amplification chip.

Laser micromachining – mechanism and applications.

Our works in rapid prototyping and DNA amplification chip have been reported in Lab-on-chip in 2005 Sep and 2005 Oct.



Short CV

Education：

- Ph.D. Chemistry Department, National Taiwan University, TAIWAN, 1998
- M.S. Chemistry Department, National Taiwan University, TAIWAN, 1992
- B.S. Chemistry Department, National Taiwan University, TAIWAN, 1990

Experience：

- Executive Officer of the TCBMA (Thematic Center of Bio & Medical Application), RCAS 2020, Nov ~. 應科生醫應用專題中心執行長
- Executive Officer of the TCMES (Thematic Center of Mechanics and Engineering Sciences), RCAS 2015, Jan ~ 2020 Nov. 應科 工程力學專題中心執行長
- Research Fellow, 2013, Sep ~
- Associate Research Fellow, RCAS, Academia Sinica, Taiwan, 2007, May -2013 Sep
- Assistant Research Fellow, RCAS, Academia Sinica, Taiwan, 2001-2007
- Postdoctoral Fellow, IBMS, Academia Sinica, Taiwan, 1998-2001